**3GPP TSG- Meeting #-bis-e R3-23xxxx**

**Online – – April 26th**

Agenda Item: 10.2.5

Source: Ericsson, Nokia, Nokia Shanghai Bell, Qualcomm Incorporated, Samsung

Title: (TP for SON BL CR for TS 38.423) NR-U metrics

Document for: Discussion, Approval

# Introduction

This paper contains a TP for SON BL CR for XnAP in relation to NR-U metrics.

Some notes:

The presence of the Rel-18 *Channel Occupancy Time Percentage UL* IE and *Energy Detection Threshold UL* IE is currently Mandatory. However, these IEs are new in Rel-18 and their presence should be Optional instead.
The reason is that the new metrics are included in an existing Rel-17 protocol structure, and extension in future releases are always realized by introducing optional IEs on top.

Criticality and Assigned Criticality for the two new IEs above are missing in the tabular.

# TP for TS 38.423

#### 9.1.3.21 RESOURCE STATUS UPDATE

This message is sent by NG-RAN node2 to NG-RAN node1 to report the results of the requested measurements.

Direction: NG-RAN node2 → NG-RAN node1.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3.1 |  | YES | ignore |
| NG-RAN node1 Measurement ID | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | reject |
| **Cell Measurement Result** |  | *1* |  |  | YES | ignore |
| **>Cell Measurement Result Item** |  | *1 .. < maxnoofCellsinNG-RANnode >* |  |  | YES | ignore |
| >>Cell ID | M |  | Global NG-RAN Cell Identity9.2.2.27 |  | – |  |
| >>Radio Resource Status  | O |  | 9.2.2.50 |  | – |  |
| >>TNL Capacity Indicator | O |  | 9.2.2.49 |  | – |  |
| >>Composite Available Capacity Group | O |  | 9.2.2.51 |  | – |  |
| >>Slice Available Capacity | O |  | 9.2.2.55 |  | – |  |
| >>Number of Active UEs  | O |  | 9.2.2.62 |  | –- |  |
| >>RRC Connections | O |  | 9.2.2.56 |  | – |  |
| **>>NR-U Channel List** |  | *0..1* |  |  | YES | ignore |
| **>>>NR-U Channel Item** |  | *1..<maxnoofNR-UChannelIDs>* |  |  | – |  |
| >>>>NR-U Channel ID | M |  | INTEGER (1.. *maxnoofNR-UChannelIDs*, …) | The NR-U channel utilised in the last reporting period  | – |  |
| >>>>Channel occupancy time percentage DL | M |  | INTEGER (0..100) | The percentage of time for which the channel resources have been utilised for DL traffic served by the corresponding NR-U Channel of the serving cell. Value 100 corresponds to the duration between consecutive reporting. | – |  |
| >>>>Energy Detection Threshold DL | M |  | INTEGER (-100..-50,…) | Average ED Threshold used for DL channel sensing at the gNB. Value is in dBm.  | – |  |
| >>>>Channel Occupancy Time Percentage UL | O |  | INTEGER (0..100) | The percentage of time for which the channel resources have been utilised for UL traffic served by the corresponding NR-U Channel of the serving cell for UEs that transmit to the serving cell. Value 100 indicates that the channel resources have been utilized for UL traffic served by the corresponding NR-U Channel of the serving cell for the whole duration between consecutive reporting. | YES | ignore |
| >>>>Energy Detection Threshold UL | O |  | INTEGER (-100..-50,…) | Average ED Threshold used for UL channel sensing as available at the gNB. Value is in dBm.  | YES | ignore |

*Editor’s note: FFS on whether the value for the Energy Detection Threshold UL in RESOURCE STATUS UPDATE can be obtained by the gNB in an implementation specific way and/or based on Energy Detection Theshold UL provided by the UEs.*

----------------------------------------------- Next Change -------------------------------------------------------

### 9.3.5 Information Element definitions

NR-U-Channel-List ::= SEQUENCE (SIZE (1..maxnoofNR-UChannelIDs)) OF NR-U-Channel-Item

NR-U-Channel-Item ::= SEQUENCE {

 nR-U-ChannelID NR-U-ChannelID,

 channelOccupancyTimePercentageDL ChannelOccupancyTimePercentage,

 energyDetectionThreshold EnergyDetectionThreshold,

 iE-Extension ProtocolExtensionContainer { {NR-U-Channel-Item-ExtIEs} } OPTIONAL,

 ...

}

NR-U-Channel-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-ChannelOccupancyTimePercentageUL CRITICALITY ignore EXTENSION ChannelOccupancyTimePercentage PRESENCE optional}|
{ ID id-EnergyDetectionThresholdUL CRITICALITY ignore EXTENSION EnergyDetectionThreshold PRESENCE optional},

 ...

}

|  |
| --- |
| **Change Ends** |